

What is claimed is:

1 1. A linear motor coil assembly for developing linear motion, comprising:  
2 a plurality of coils arranged in a line in a direction of movement, each coil  
3 having an associated coil shaft, said coil shafts being perpendicular to the direction  
4 of motion; and  
5 a flat cooling tube, said cooling tube having a cross section elongated in a  
6 direction parallel to the coil shafts and folds into which said coils are adapted to  
7 engage, said cooling tube meandering inside the plurality of coils.

1 2. The linear motor coil assembly according to claim 1, wherein the flat  
2 cooling tube has a plurality of clearance holes for passing coolant, said clearance  
3 holes being formed in a direction parallel to the coil shafts.

1 3. The linear motor coil assembly according to claim 1, wherein the flat  
2 cooling tube comprises a plurality of round pipes for passing coolant, said pipes  
3 being aligned and attached in a direction parallel to the coil shafts.

1 4. The linear motor coil assembly according to claim 1, wherein the flat  
2 cooling tube has interleaved folds at least equal in number to the number of coils.

1 5. The linear motor coil assembly according to claim 1, wherein the  
2 elongated cross section of the flat cooling tube is the same as, or slightly larger than,  
3 the length of the coils in an axial direction.

1 6. The linear motor coil assembly according to claim 1, further comprising  
2 cores, divided for each coil, around which the coils are wound.

1 7. The linear motor coil assembly according to claim 6, further comprising a  
2 base plate, the cores being fixed to the base plate in a line generally parallel to the  
3 direction of motion.

1 8. A method of manufacturing a linear motor assembly for developing linear  
2 motion, comprising the steps of:  
3 providing a plurality of cores divided for each magnetic pole;  
4 winding coils around the respective cores;  
5 providing a flat cooling tube having interleaved folds, the number of folds  
6 being at least equal to the number of coils, said folds being changeable by the coils;  
7 fitting the core into the folds; and  
8 arranging the cores in a line.